



HSIP Program



2023 Small Scale Local HSIP Grant Guide

For additional information, see the Program's website at:
<https://vtrans.vermont.gov/highway/local-projects/hsip>

Application Deadline: **June 16, 2023 at 4:00 PM**

Contents

A. Grant Preparation Instructions	2
B. Overview.....	3
C. Grant Program Timeline.....	4
D. Eligible Applicants & Projects.....	4
Eligible Costs.....	4
E. Available Funding and Financial Responsibility.....	5
F. Application Submission Instructions	5

Attachment A – Example Map

Attachment B – Countermeasure Guidance

Attachment C – Regional Planning Commission Contact Information

Attachment D – VTrans District Transportation Administrators

A. Grant Preparation Instructions

1. **Read the Countermeasure Briefs** (provided Attachment B) to ensure that your project is eligible for a VTrans HSIP Program grant. All projects must be within the public right of way and installed as intended. Review the information on proper installation provided in Attachment B.
2. **Complete the Project Application** The form is set up as a fillable Adobe PDF. If you elect to print the form and fill in by hand, please type or print in blue or black ink. Applications missing requested information will not be considered.
3. **Include a clearly annotated map** (example provided in Attachment A) with the following information:
 - a. Clearly shows the limits of the proposed project.
 - b. Identifies prominent features and/or destinations.
 - c. Identifies environmental concerns
 - d. Includes route numbers and/or road names.
 - e. Other pertinent information can be included if the map remains legible.
4. **Cost Data** – if you are requesting more than the cost automatically calculated in the application, provide backup detail for the proposed construction costs, in the form of an engineer’s cost estimate if available. Backup must match the construction cost included in the application or an explanation of the difference must be provided.
5. **Project area photographs** – Provide at least two photos of the general project area. Photos are especially important if the proposed project is reconstruction of an existing facility. Photos should be recent, of good quality, clearly labeled, and easily interpreted. If environmental concerns are nearby, additional photos will be required, as outlined in the application.
6. **Notify your Regional Planning Commission (RPC)**, letting them know that you are submitting the application. *Note that the RPCs are a great resource for you as you put your application together.* See Attachment C for contact information for the RPC in your area.
7. **Include a current letter of support from the governing body of the applicant** that includes commitment to future maintenance of the project.
8. **Notification to VTrans** - For construction projects located in or adjacent to a State Highway Right-of-way, coordination with the District Transportation Administrator (DTA) is required. Include a copy of your correspondence and any comments received from the DTA. The DTA oversees maintenance of the State Highway System in their district. See Attachment D for DTA contact information.

TRAINING SESSION

Applicants are strongly encouraged to attend or view the training session that will review the grant application requirements and the project development process.

ATTEND THE WEB-BASED TRAINING

The training will be offered via a live web-based format:

May 16, 2023

1:00 to 2:00 PM

To access the training, join the meeting via the link below:

Microsoft Teams meeting

Join on your computer, mobile app or room device

[Click here to join the meeting](#)

Meeting ID: 276 208 771 683

Passcode: rpezXm

[Download Teams](#) | [Join on the web](#)

Or call in (audio only)

[+1 508-556-4407,,606468934#](#) United States, Worcester

Phone Conference ID: 606 468 934#

[Find a local number](#) | [Reset PIN](#)

Applicants without an internet connection may access the training via phone by calling the number noted above. If you have never used MS Teams, you may be prompted to download some software. Please plan to join the meeting a little bit early to make sure you work out any technical issues.

Multiple people can view a training, but one person must sign in online. No RSVP is required.

VIEW RECORDED WEBINAR

The training will be recorded and will be available shortly after the session on the VTrans Local HSIP Program web page: <https://vtrans.vermont.gov/highway/local-projects/hsip>

B. Overview

The intent of the Small Scale Local HSIP Grant is to improve safety on local roadways. The grant is administered within the VTrans Municipal Assistance Section.

Ideal candidate projects for these grants are those that will be ready to go to construction in 2023/24. Funding for these grants will be 100% from the State and is to cover construction only (design, permitting and administration are not eligible for reimbursement).

C. Grant Program Timeline

Applicants to the 2023 Small Scale Local HSIP Grant can expect the following time frame for this year's grant cycle.

- May 1 – Grant program guide and materials available online
- June 16 – Applications due to VTrans
- End of June/Beginning of July – Applications are reviewed for completeness
- July – Notification to all applicants
- Fall 2023 Grant agreements in place
- Late 2023 to Spring 2024 – Project Construction
- As completed – Invoicing/Reimbursement

D. Eligible Applicants & Projects

Successful applicants will be required to sign a grant agreement that commits them to maintenance responsibility for completed construction projects.

Projects may be combinations of any of the following facilities:

- Signage
- Striping
- Clearing
- Breakaway devices

Multiple project locations may be submitted together and will likely be awarded as one grant.

Eligible Costs

The intent of projects constructed with these grant funds is to address simple, but critical, improvements that will increase safety on the local roadway system. These projects will be funded with all State dollars, lessening the requirements to be met before construction can take place. This funding may not be used to provide match to a federally funded project or to add on to a federally funded project. These projects must be small stand-alone improvements.

Awards will be for construction only. Applicants will be responsible for the cost of any design and administration that is needed.

E. Available Funding and Financial Responsibility

Project Budget – Funding for Small Scale projects is to cover only the construction component of the project. Any administration or design costs are not eligible for reimbursement. Small scale grant awards are capped at \$35,000. Minimum award amount is \$5,000.

Environmental and Right of Way Requirements – Vermont state statute (22VSA§14) requires that any undertaking with state funding be reviewed for its impact on archaeological or historic resources. Successful applicants must also provide photos of any environmental concerns, e.g. wetlands, river buffers or other natural resources impacted by the project. Project sponsors must also attest that they have all necessary rights to construct the project. To see what is needed to satisfy the 22VSA§14 requirements, see <https://tinyurl.com/22VSA-Guide>

Reimbursement – The Small Scale grant is provided on a reimbursement basis. Applicants submit invoices for completed work and the Agency reimburses the applicants for that total.

Project Timeline – It is expected that construction of Small Scale projects will be complete in the year following execution of the grant agreement.

F. Application Submission Instructions

Address all questions and criteria as concisely as possible. If you are unsure of any question or criteria, please contact the HSIP Engineer at AOT.HSIPEngineer@vermont.gov.

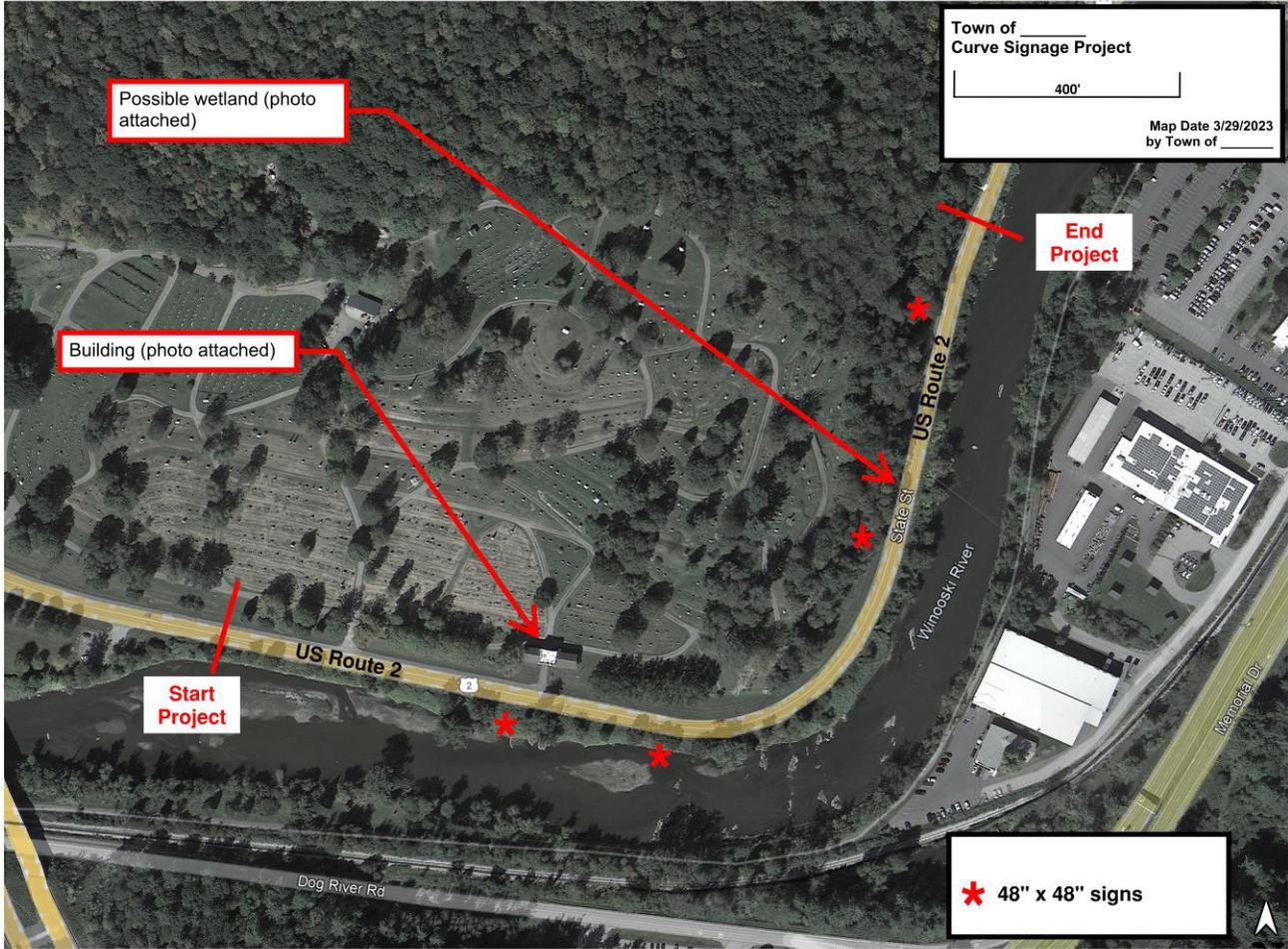
1. **Review your package for completeness and accuracy.** You may include a brief cover letter. *Applications must include all the items on the application checklist that is included in the selection criteria template documents.*

2. Submit electronically:

- a. Electronic submission of complete applications, including all supporting materials in an Adobe PDF format is required and received by 4:00 PM on June 16, 2023.**
- i. File names shall include the name of the applicant (e.g. Rutland City, Barre Town) and either Application Form or Supporting Materials.
 - ii. In general, a maximum of two PDF files per project type being applied for will be submitted (one PDF file of the Project Application Form and one PDF file of all of the criteria responses and supporting information (e.g. maps, plan excerpts, photos, etc.))
 - iii. The state email system can handle file attachments up to 40 MB. Applicants may use file transfer programs such as Dropbox or YouSendIt, but should contact the HSIP Engineer at AOT.HSIPEngineer@vermont.gov with adequate lead time to make sure that applications are received on time.
 - iv. VTrans will acknowledge all electronic submissions with an email notification.

Applications must be sent to HSIP Engineer at AOT.HSIPEngineer@vermont.gov

Attachment A: Example Map



Small Scale HSIP Local Grant Program

Attachment B: Countermeasure Guidance

This document lists the safety treatments that the grant program will fund in Fiscal Year 2023. Towns and Cities may request funding to install these treatments on any public, local roadway meeting the listed criteria. If a grant is awarded, the installation must comply with the conditions listed with each treatment.

Curve Signage

The HSIP grant program may be used to improve curve signage (including replacing signs with poor retroreflectivity) and bring it in line with MUTCD recommendations. The appropriate signage depends on the curve radius and advisory speed.

Chevrons



Chevrons may be added along the outside of a turn or curve. They are recommended for longer, tighter, or higher speed curves. Their use must adhere to [MUTCD Section 2C.09](#). Chevrons should be spaced as shown in MUTCD Table 2C-6:

Table 2C-6. Typical Spacing of Chevron Alignment Signs on Horizontal Curves

Advisory Speed	Curve Radius	Sign Spacing
15 mph or less	Less than 200 feet	40 feet
20 to 30 mph	200 to 400 feet	80 feet
35 to 45 mph	401 to 700 feet	120 feet
50 to 60 mph	701 to 1,250 feet	160 feet
More than 60 mph	More than 1,250 feet	200 feet

Delineators

For curves that would benefit from additional guidance devices but do not justify chevrons, retroreflective delineators are another option. The use of delineators is governed by [MUTCD Chapter 3E](#).

Advance Warning Signs

Advance warning signs indicate to drivers when they should slow for a curve. Their use is based on the difference between speed limit and advisory speed. If a curve does not already have an advisory speed limit, [this document](#) explains how they are set. The graphic below shows the types of signs included in this treatment.



[Source: MUTCD Figure 2C-1]

The typical application is one or two warning signs per approach with chevrons and/or a large arrow sign along the curve. An example is [MUTCD Figure 2C-2](#).

Sizes that should be used are listed in [MUTCD Table C2-2](#).

Guidance on whether to use curve (W1-2), turn (W1-1), reverse turn (W1-3), reverse curve (W1-4), winding road (W1-5), or hairpin curve (W1-11) signs can be found in [MUTCD Section 2C.07](#).

Recommended sign sizes are shown in [MUTCD Table 2C-4](#).

MUTCD Table 2C-5, copied below, lists requirements for horizontal curves on arterial and collector roadways with daily traffic over 1,000. These standards can also be used to select sign packages for other local roads.

Figure 1 is an application of these signs on Vermont roads.



Figure 1. MUTCD Compliant Curve Warning Signs in Vermont.

Type of Horizontal Alignment Sign	Difference Between Speed Limit and Advisory Speed				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W1-10) (see Section 2C.07 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Intersection Signage

Towns may request funding to upgrade intersection warning signs. These should be considered for intersection approaches with short sight distance, a history of crashes, or unusual geometries such as a high skew.

Sign enhancement options include:

- Doubled-up signage (included on both sides of the roadway – also known as “gate-posted”).
- Oversized signage.
- Reflective strips on signposts.
- Additional warning signs.
- “Stop Ahead” warning signs.
- Advanced yellow street name signs as supplemental plaques mounted below warning signs (see Figure 2).
- Replacement of signs with poor retroreflectivity.

These should be installed consistent with the MUTCD, including:

- [Section 2C-36](#), Advance Traffic Control Signs
- [Section 2C-46](#), Intersection Warning Signs
- [Section 2C-47](#), Two-Direction Large Arrow Signs



Figure 2. Application of intersection signage in Vermont.

The following is a list of the isolated safety effects of several countermeasures included in this package:

- Advanced street name signs (meaning yellow supplemental street name signs installed below warning signs) reduce fatal and injury crashes by 1 percent, although this relates to signalized intersections ([CMF ID 2450](#)).
- Doubled-up Stop signs (installed on both sides of the roadway) reduce angle crashes by 55 percent, though the study is only rated 1-star on the CMF Clearinghouse ([CMF ID 1661](#)).
- Increased retroreflectivity of Stop signs reduce fatal and injury crashes by 9.4 percent ([CMF ID 6052](#)).
- Flashing beacons reduce fatal and injury crashes by 10 percent at stop-controlled intersections ([CMF ID 447](#)).

Edge Line Markings on Paved Roads

Towns may request funding to add or enhance white edge line markings. Four-inch lines are standard, but for additional emphasis 6 or 8-inch lines may be painted. The MUTCD requires edge lines on rural arterials with a traveled way of 20' or more and an average daily traffic of 6,000 vehicles or greater. They are recommended on roads with an average daily traffic over 3,000 or where additional delineation may reduce run-off-the-road crashes. Edge lines can be painted on roads with or without center line markings (see [MUTCD Section 3B-07](#)).

Edge lines should comply with [MUTCD Section 3B-06](#):

Standard:

1. If used, edge line pavement markings shall delineate the right or left edges of a roadway.
2. Except for dotted edge line extensions (see [Section 3B.08](#)), edge line markings shall not be continued through intersections or major driveways.
3. If used on the roadways of divided highways or one-way streets, or on any ramp in the direction of travel, left edge line pavement markings shall consist of a normal solid yellow line to delineate the left-hand edge of a roadway or to indicate driving or passing restrictions left of these markings.
4. If used, right edge line pavement markings shall consist of a normal solid white line to delineate the right-hand edge of the roadway.

Guidance:

5. 05 Edge line markings should not be broken for minor driveways.

Option:

6. 07 Wide solid edge line markings may be used for greater emphasis.

Safety Effectiveness:

Edge lines reduce crashes by 15 percent for pavement widths as narrow as 20 ft, or even narrower if an engineering study illustrates there would be a safety benefit ([CMF Clearinghouse ID 5646](#)).

Intersection Pavement Markings

Funds may be used to add or improve pavement markings at stop-controlled intersections. These pavement markings include widened (8-inch) edge lines through intersections, stop bars, and “stop ahead” markings.

Edge lines extended through intersections must be broken (dashed). They should have 2-foot lines with 2 to 6 foot gaps. (See [MUTCD Section 3B.08](#)). They must be at least the same width as the lines they extend.

Stop bars (see [MUTCD Section 3B.16](#)) should be placed at the desired stopping point and at least 4 feet in advance of a crosswalk. They must be between 4 and 30 feet from the nearest edge of the intersecting traveled way. They should be 12 to 24 inches wide and solid white. They should be coincident with stop signs. At yield signs, a yield line ([MUTCD Figure 3B-16](#)) must be used instead.

“Stop ahead” markings must be white and read in the direction of travel. Letters shall be at least 6 feet in height and scaled to fit one lane in width. The gap between the two words must be at least 4 times the letter height.

Figure 2 shows brighter and wider pavement markings used at an intersection, along with broken lines through the minor approaches.



Figure 2. Application of pavement markings at intersections.

Safety Effectiveness

As stated previously, these signs installed as part of larger packages have a proven history of reducing crash frequency and severity at stop-controlled intersections. The following CMFs show the isolated safety effects of several countermeasures included in this package.

- “Stop Ahead” pavement markings reduce injury crashes by 22 percent at rural stop-controlled intersections ([CMF ID 396](#)).
- A CMF shows that increasing stopping sight distance reduces fatal and injury crashes related to stopping sight distance at stop-controlled intersection ([CMF ID 9657](#)).

Remove Fixed Objects to Widen Clear Zone

Clear zones are unobstructed areas outside the traveled way that allow a driver to stop safely or regain control after leaving their lane. Funding may be used to remove fixed objects, such as trees or utility poles, that an errant driver is likely to strike. Objects on the outside of horizontal curves, where they are most likely to be struck by errant drivers, are the best candidates for removal. Under this program, objects to be removed must be within the right of way.

Enhancement includes maintaining existing clear zones where saplings and other vegetation have begun to grow to improve sight distance and remove the potential for future fixed objects.

Figure 3 is an FHWA graphic which shows the expected crash reduction associated with widening a clear zone.

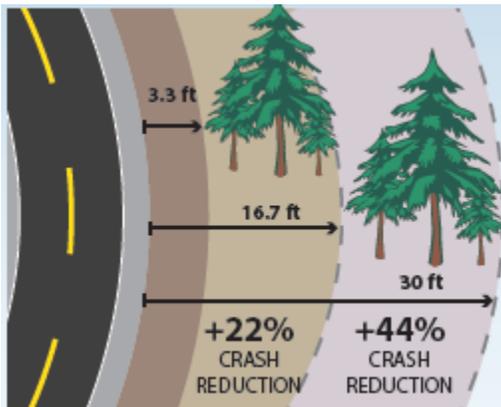


Figure 3. Crash reduction from clear zone widening.

Source: FHWA.

Implement Breakaway Devices

Section 2A.19 Lateral Offset MUTCD

In general, sign posts are required to be crashworthy unless outside the clear zone (traversable area abutting the traveled way). Breakaway devices are designed to shear off or yield when enough lateral force is applied (by an errant vehicle). Breakaway supports are used for other roadside hardware such as luminaires. Funds may be used to upgrade a roadside device to a breakaway support as an alternative to removing it.

Figure 4 is an example of two breakaway devices where the bolts shear when sufficient lateral force is applied.



Figure 4. Breakaway devices applied in the field.

Cost Table

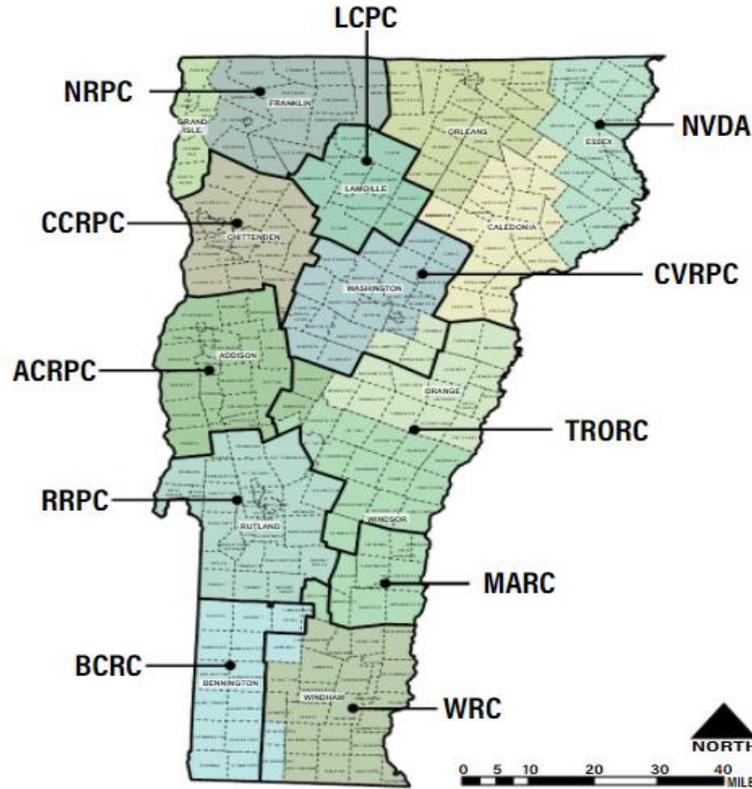
Reference Costs

Item	Unit Cost
Signing	
Sign posts	\$250
36" x 36" Type B signs	\$300
48" x 48" Type B signs	\$500
Delineator and steel post	\$125
Durable Pavement Marking	
4-inch white edge line	\$5,800/mile
6-inch white edge line	\$7,900/mile
8-inch white edge line	\$12,000/mile
Stop bar	\$200
"Stop Ahead" marking	\$270
Other Items	
Fixed object removal	\$1,000
Install breakaway devices	\$300

1 Reimbursement is on an actual cost basis. Costs in this table are a reference for planning and grant applications.

Attachment C: Regional Planning Commissions

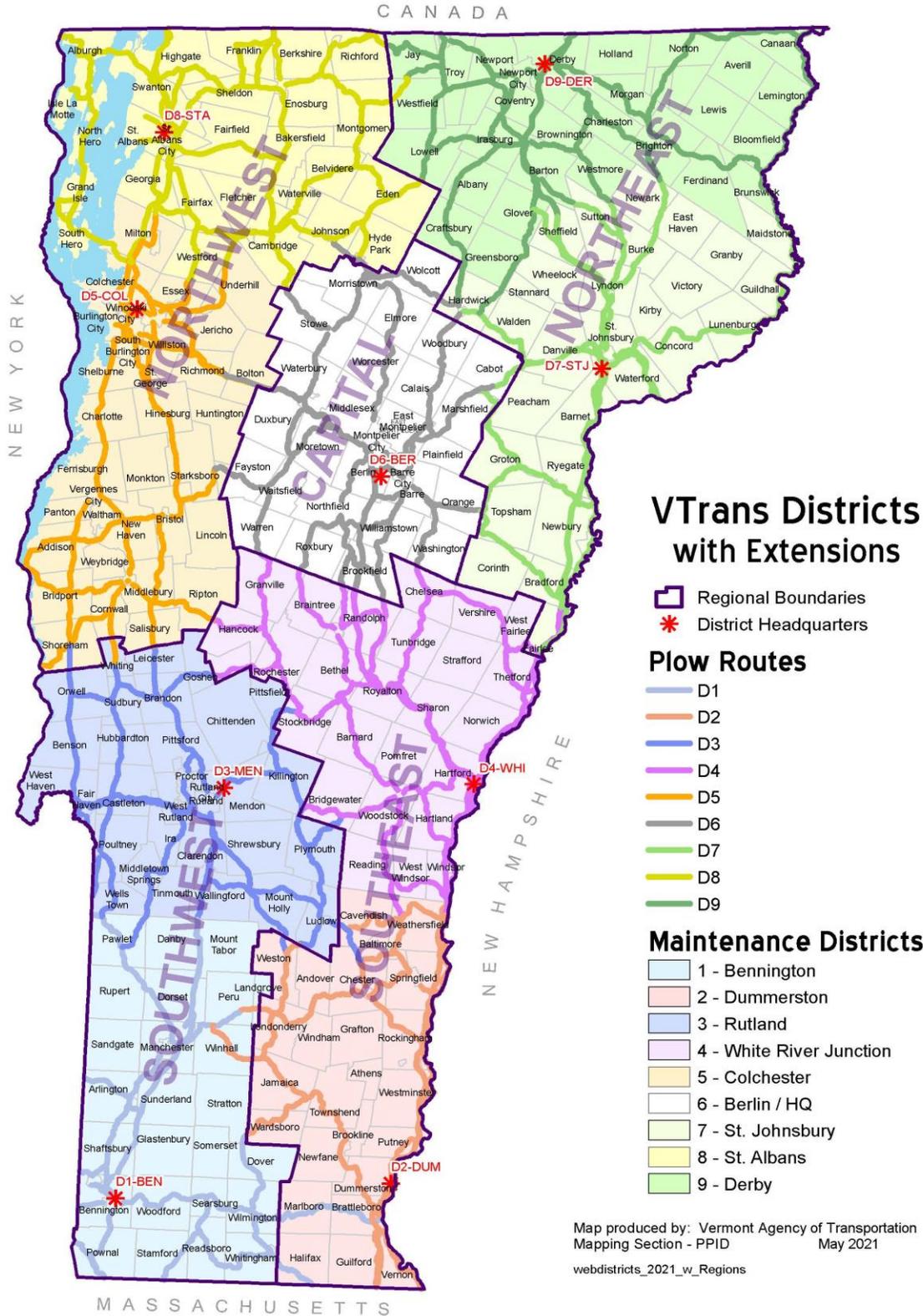
Vermont’s Regional Planning Commissions are important resources for VTrans Bike/Ped Program applicants. It is important to obtain a letter of support from the Commission that represents your region of the State. Contact the Transportation Planners at the numbers listed below. For more information, go to the Vermont Association of Planning and Development Agencies website at: <https://www.vapda.org/>



**STATE OF VERMONT
REGIONAL PLANNING COMMISSIONS**

Addison County Regional Planning Commission	(802) 388-3141
Bennington County Regional Commission	(802) 442-0713
Central Vermont Regional Planning Commission	(802) 229-0389
Chittenden County Regional Planning Commission	(802) 846-4490
Lamoille County Planning Commission	(802) 888-4548
Northeastern Vermont Development Association	(802) 748-5181
Northwest Regional Planning Commission	(802) 524-5958
Rutland Regional Planning Commission	(802) 775-0871
Mount Ascutney Regional Commission	(802) 674-9201
Two Rivers-Ottauquechee Regional Commission	(802) 457-3188
Windham Regional Commission	(802) 257-4547

Attachment D: District Transportation Administrators



Map produced by: Vermont Agency of Transportation
Mapping Section - PPID
May 2021
webdistricts_2021_w_Regions

Contact info can be found at: <https://vtrans.vermont.gov/operations/districts>